

STANDARD FORM NO. 64

~~CONFIDENTIAL~~~~SECRET~~*Office Memorandum* • UNITED STATES GOVERNMENTTO : The Files 17 February 1956

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FROM :

SUBJECT: Contract RD-91SA, Marine Crystal Video, Trip and Progress Report.

1. On 31 January and 1 February the writer visited the  plant to determine the status of the subject contract. Those present were:

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2. The ELINT Activities Branch of SPD has indicated an urgent need for transistor video amplifiers similar to a type being developed under the terms of this contract. In an effort to determine how these units might be obtained on a priority basis from  the writer explored various means of procurement. In discussions with the  people, it was decided that fabrication of the spare units will be started immediately so that these items may be forwarded to us in the form of advance shipment of spare parts. This will make possible an immediate delivery of 18 pre-amplifiers of 750 kc bandwidth type. The contract is to be amended to allow for additional units to be furnished with the basic system. Additional antennas in the L, S, and X bands are also going to be procured under a similar setup. The contract will also be amended to allow for more antenna spares. This is noted in Paragraphs 4 and 5 of the attachment.

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3. Two complete channels of a representative band have been fabricated. This includes all circuit functions from the crystal preceeding the pre-amplifier through all amplifiers to the plates of the cathode ray tube. The operation of this was demonstrated to the writer, who was allowed to conduct certain tests on it. The operation of this unit appears to be very satisfactory. As the relative level signal in each channel was changed, it was noted that the azimuth indication on the oscilloscope changed accordingly. It was noted, however, that for extremely short pulses on a very low repetition rate, there was an error in apparent azimuth of about 10 degrees. This, however, is an impossible condition which does not exist in practice. For all normal pulse widths and repetition rates, the azimuth indications are reasonably accurate.

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4. The method of calibration of each channel within each band was discussed and the manner in which it is to be accomplished. In all previous discussions the writer had based most thoughts upon the fact that certain of the balance controls would be accessible from the front panel. It was, therefore, with considerable surprise that it was learned that all balance controls are contained within the internal chassis. It is therefore necessary to remove one of the oscilloscope sub-assemblies from the console in order to make any adjustments. The button which controls the calibrator itself is located on the front panel, while the balance controls are located on the side of the chassis, approximately half-way back. In order to make this adjustment, it is necessary to loosen the four captive screws holding the sub-assembly within the console, completely remove the unit from the console, and connect it to the plug by means of an adaptor cable. In this position, it will then be possible to actuate the calibrator and perform the necessary adjustments to the calibration potentiometers. The writer questioned the advisability of this, and suggested that a more suitable location for these adjustments would be on the front panel of the unit. Note Paragraph 10 of the attachment. The project engineer, [ ] was rather adamant in his position in stating that the design work had been completed and it would be impossible to make any changes, as there was no space available. The writer does not consider that a breadboard layout and an engineering sketch is sufficient proof to support a statement of a fixed layout. [ ] was unable to furnish further evidence. Therefore, the writer took the position that [ ] is to investigate the possibility of moving certain of the balance controls to the front panels so that they may be accessible at times when they may be needed.

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5. The question of shutters for the antenna was discussed. [ ] has investigated the various electro-mechanical solenoids and other relays which may be used to operate crystal shutters in the high-band antennas and has found that the power required to operate these units far exceeds the total requirements of the entire system in the other electronic circuitry. Therefore, they have requested permission to investigate mechanical means of closing a shutter. This could be accomplished in several ways, but chiefly by the use of a flexible cable. The writer took the position that such a means would be feasible only if a single movement of a single control would operate all shutters, electrical and mechanical. Please note Paragraph 16 of the attachment.

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6. In general, the progress of this contract has been satisfactory, both at [ ]. Certain delays have been encountered, of which the most serious was the difficulty in getting the present amendment to the contract for the calibration and filter system. This amendment is dated 1 February 1956. However,

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in checking with [ ] on 10 February, the paper had not yet reached them. It is believed that [ ] will have the authorization to proceed work during the week of 13 February. In other respects, the writer has felt certain dissatisfaction with the progress. This has been noticed in two particular directions. The first is a lack of overall organization, although independent groups operating on the various problems have done excellent jobs of solving their particular phase of the work.

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7. This was most noticeable during the period that the Section Engineer, [ ], was handling this project. More recently, [ ] has taken over the overall direction of this project. It was noted that a much better organizational setup was accomplished under [ ]. It was since learned that [ ] has left the [ ] organization. It is believed, and hoped, that the program will stabilize as soon as [ ] can become more fully aware of all of the problems. The second point of dissatisfaction concerns the project engineer, [ ]. The writer does not question [ ] engineering capabilities; however, he appears to have little imagination and appears to be rather stereotyped in his thinking and his approach to problems. The writer has on many occasions found it extremely difficult to have certain problems considered. This is not made easier by the fact that many of the situations must, by necessity, be clothed in security regulations, in which the writer is unable to reveal the reason and necessity for certain approaches. The writer, however, does not consider a lack of total knowledge of a problem as reason to refuse consideration of that problem. This dissatisfaction with the project has been brought unofficially to the attention of the [ ] through discussions the writer has held with [ ], the local representative. It may be noted that [ ] generally agrees with the writer in his observations.

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Attachment:

[ ] Minutes of Meeting of 1 February 1956.

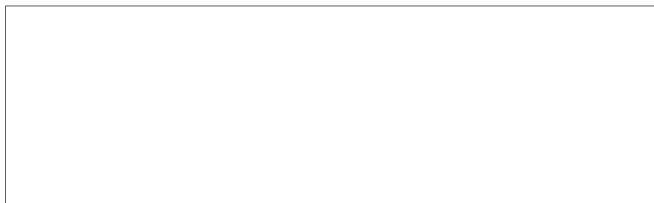
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-3-  
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**OFFICE CORRESPONDENCE**

In reply refer to:  
H-2061/ARA/70/56

6 February 1956

SUBJECT: Meeting with Dept. of Defense on February 1, 1956 at

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PRESENT:

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CC: Those present

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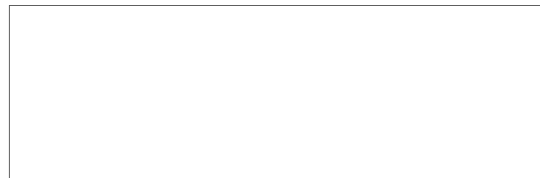


A conference was held to determine the H-2061 status and to discuss current problems. The discussion included the following points:

1. A Navy Pulse Analyzer, Model RDJ-1 is to be loaned by the government to  for the purpose of testing the transistor circuitry used in conjunction with this piece of equipment. It has been decided to use the three (3) Tektronix Model 514AD Oscilloscopes as maintenance test equipment. The three Tektronix oscilloscopes will be delivered to the customer without shock or vibration mounts.
2. The Band 8 horn, loaned to the customer for testing, is to be returned following these tests in order to expedite ordering of these horns by the sub-contractor.
3. An Ampex Model 800, multiple channel, tape recorder is to be furnished to Philco by the customer for testing the circuitry used in conjunction with this piece of equipment. This recorder is to be furnished with AM/PWM Record Amplifiers. The recorder networks are to be designed for actual recorder bandwidths.

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H-2061/ARA/70/56

-2-

6 February 1956

4. [ ] is to build eighteen (18) additional video pre-amplifiers of the 750 KC bandwidth type to be included as additional spares. The contract is to be amended to allow for additional spares. 25X1
5. The contract is also to be amended to allow for more antenna spares.
6. A contract amendment approval to allow for the additional scope, filters and calibrators, is expected in [ ] by February 3. 25X1
7. The antenna structure is to be designed with a flat base mount at present. A final decision on the method of mounting is to be made on or before February 10 by the customer.
8. The relay to be used for actuating an external camera will be a momentary closing type with one extra set of contacts for controlling an external alarm circuit. The camera and the alarm equipments are not to be furnished by [ ]. 25X1
9. The possibility of seeing the [ ] is almost nonexistent. Therefore, the questions about the [ ] and the other structures which may interfere with or cause inaccuracies in the operation of the H-2061 equipment are left unanswered at this time. In the event information pertaining to the vessel is transmitted to [ ] by the customer in time to modify the existing design, if modification is required, this will be done. However, due to the time delay involved and the added cost incurred in making design changes it may not be advisable to make any modifications after February 10. 25X1
10. The customer has suggested that certain balancing controls be changed in location so as to be accessible from the front panel of the console unit. [ ] is to investigate the modification and to determine the feasibility of the redesign. In the event that the change is physically possible there will be a time delay and added cost incurred in both the redesign work and procurement of special subminiature potentiometers. 25X1

CONFIDENTIAL

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H-2061/ARA/70 /56

-3-

6 February 1956

11. The console unit is to be designed to have all connectors except the phone jack and the camera actuate connector at the rear. The customer is to determine the advisability of changing the recorder connectors to a four terminal type plus a four conductor shielded cable. If no decision is forthcoming before March 1 from the customer the design will continue as is.
12. The voltmeter at the front of the console is to have an expanded scale with no marking except for fully charged and recharge indicator lines.
13. The customer is to provide  with an average PRR6 crystal video receiver on a loan basis in order to compare the noise performance of the SBT video pre-amplifiers with the PRR6 used as a standard. The PRR6 has a one megacycle bandwidth. 25X1
14. The customer is to return the miniaturized 750 KC video pre-amplifier sent for evaluation. This unit is to be rechecked to determine why it failed.
15. The battery charging problem was discussed. No decision was reached on whether  is to supply charging equipment. It is known that a power source exists aboard ship of the 110 volt - 60 cps type. A decision on charging facilities must be made by March 1 in order that suitable equipment be made available. 25X1
16. The antenna shutter question was discussed. If the subcontractor finds it necessary to use a mechanical system to operate the shutters for bands 7 and 8, the mechanical and electrical controls shall be designed to operate simultaneously from one control point.

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